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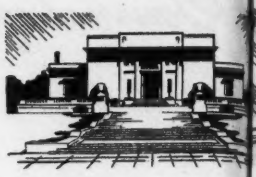
COVER: Wartime pharmacy and hopes for the peace to come are discussed beneath the benevolent gaze of the father of American pharmacy as preserved in the bronze features of the William Procter, Jr., memorial at the American Institute of Pharmacy, Washington, D. C. The foyer where the statue has been placed no longer echoes to the aimless footsteps of capital tourists. Most A. PH. A. visitors are now business bound, seeking some bit of information on wartime problems.



The Way I

NOT "one voice for pharmacy," but a harmonious duet came out of the historic conference between the 21 top men of A. Ph. A. and N. A. R. D. held in Washington's modernistic Statler Hotel on December 12. The upshot of the meeting is that obstacles to better American pharmacy will be given "both barrels" from a coöperative attack by the national representatives of the profession. Judging from the friendly participation which marked the joint assembly, the two associations seem to have a greater mutual understanding of the pharmaceutical problems in their respective fields than many have been willing to admit.

There has been talk before about A. Ph. A. and N. A. R. D. getting closer together, but the conference just held is the first time that a practical joint stand on so many common problems has been worked out. It should not be imagined that both groups suddenly see eye to eye on every point. It does mean that they will fight side by side for a worthy cause, making the pharmacist a real power.

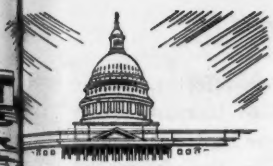
How such coördination works out in practice is shown by the joint brief recently filed with the Senate Committee on Finance asking that the alcohol tax drawback be increased to $6.75 per proof gallon if the tax is jumped to $9.00. The two associations also recommended that the drawback be based on the use of the alcohol rather than on the sale of drugs and medicines in which it is used, thereby simplifying the records required. This dual request to keep down the cost of drugs and medicines to the public could leave no doubt on Capitol Hill as to pharmacy's stand.

Another piece of legislation that is bound to come up for discussion wherever members of the health professions get together these days is the Wagner-Murray-Dingell Bill, which broadens the scope of the social security system. Rather than follow the line laid down by those in other fields, as has happened so often in discussions of so-called socialized medicine, the pharmacist's representatives dug into the proposals to learn just what they may mean to pharmacy and to the public. Realizing that the principal criticism of medical care is its high cost, which cannot be borne by millions in the low income groups of normal times, it seemed to be agreed that some change in the administration of medical care may be in the offing. In fact several million persons have already availed themselves of the advantages of group health insurance.

Whatever plan finally evolves, the joint assembly wisely agreed to seek to maintain and make readily available a high standard of professional service for the protection of the public and to retain the patient's freedom of choice of pharmacist and others practicing the health professions.

Although in the final analysis it is the citizen's right to decide how he wishes to obtain medical services, it is equally the pharmacist's right to have a voice in how his profession is to be practiced. With this in mind the conference went to work on Title IX of Section 11 of the Wagner bill, which would put medical benefits into the social security program. Although pharmacy is not specifically mentioned in the bill, it seems unlikely that such a measure would be adopted without drugs and medicines eventually being included. As it was agreed that Title IX contained unwarranted restrictive provisions and broad powers, the conference went on record as "opposed to the attempted regimentation of medical practices and health services and any autocratic principles contained" therein.

Through the day's long agenda the conference members discussed a host of other problems facing pharmacy and laid plans for their solution as outlined on page 394 of this



Looks To Us

issue. Putting these plans into action will be facilitated by cross-representation of A. PH. A. and N. A. R. D. on a number of committees now functioning in their respective associations. The continued coöperation of the combined executive committees and the examination of new problems as they arise will not await the next meeting in November, however, but will be promoted by a special interim committee.

It will be good news to the pharmacist that his representatives did more than engage in a talk-fest "fer" and "agin" the topics on the agenda. The plans for a co-operative effort to solve pharmaceutical problems should produce practical results in many ways. From here it looks as though the business and professional phases of pharmacy can be conducted side by side on a national scale just as effectively as many pharmacists have done in their home towns.

FAR-sighted planning by the AMERICAN PHARMACEUTICAL ASSOCIATION that will facilitate the difficult transition to peacetime practice is now going forward. There are many problems ahead.

An oversupply of pharmaceutical manpower in post-war years could well be as difficult a problem as the current shortage. Streamlined transportation may make the pharmacist on every corner no more necessary than a corner physician. Shorter working hours, born of wartime problems, will further reduce the number of pharmacists needed if the profession decides it can permanently dispense with the 15-hour day as other callings have, and still maintain adequate health service.

Thousands of women will have entered the profession, accelerating the previous trend in this direction. They will not readily give up their newly won status and many will compete with men in the field despite an outworn prejudice.

In addition we must be ready to receive pharmacists returning from the battlefield. Special refresher courses for them in the colleges, such as the Philadelphia College has already announced, will aid them greatly. Many will take advantage of the free higher education which it is expected will be offered returning veterans. College education in general will become more common and increase the number of pharmaceutical recruits as the profession becomes more attractive.

Surveys now being made reveal a maldistribution of pharmacists the country over, with a disproportionate number concentrated in the urban areas where overhead is highest and competition keenest. Through coöperation of state organizations, perhaps a permanent roster of the nation's pharmacists could be set up that would help to resolve this problem. By consulting such a roster, the pharmacist could determine where his services are most needed and where success on a professional basis would be least difficult. The profession itself would have a running inventory of the strength and types of pharmacy manpower available to fill any emergency need.

Means for the extension of medical care to the people and public health measures on a larger scale than ever before may be expected, Dr. G. L. Jenkins' committee points out. What form this service takes is of concern to every pharmacist. Our stand should be based on what effect such service will have on the public and on pharmacy, rather than base our actions on the opinions of those in other professions. In any case recent developments indicate an expansion of pharmacies serving hospitals, group clinics and health centers. This should mean more pharmaceutical service of a

strictly professional nature, thereby raising the prestige of pharmacy as a whole.

Will the rapidly expanding field of medical technology emerge as a completely independent profession or be largely in the hands of pharmacists? This will depend for the most part on whether pharmaceutical education follows the lead of more progressive colleges which are already offering this training. Here is pharmacy's great post-war opportunity that will determine whether we shall expand pharmacy service through professional activity or whether we prefer to continue the development of professionally unrelated lines.

Wartime developments and future research will continue to increase the fund of technical knowledge that the pharmacist must have at his command if he is to retain his place as the principal authority on drugs. This means that we must zealously guard the educational standards of the profession. It may portend the time when educational requirements must be raised still further if we are to keep pace with other professions in the public health field.

Government regulation and insistence on high standards in matters affecting public health can be expected to increase rather than diminish. As the one legitimate outlet for pharmaceutical service, the pharmacist can benefit by this trend if it is channelled into constructive action freed of regimentation and bureaucracy.

The complexities of the developing American social pattern hold many other problems of concern to us. The AMERICAN PHARMACEUTICAL ASSOCIATION and other organizations are planning and acting to cope with them. Pharmacy must embark on a post-war program that has been worked out on the basis of experience rather than expediency. The program can be powered by pharmacy as a whole only by bringing all state and local groups into the project. The report of the A. PH. A. Committee on Long Range Program of Policy has been supplied to all state associations as a basis for further development of post-war planning of their own and additional material will be furnished as it becomes available. Those who will some day abruptly find themselves on the way will want to have a say as to where we're going.

PHARMACY CORPS EXAMINATIONS ANNOUNCED

EXAMINATIONS will be held January 31 through February 4 for the purpose of qualifying candidates for appointment as second lieutenants in the Pharmacy Corps of the Regular Army. Boards of Medical Department officers will conduct the tests, which will consist of a written professional examination, a physical examination and a determination of the candidate's adaptability for military service.

The professional examination will cover five subjects: (1) pharmaceutical chemistry, (2) pharmacology, (3) pharmacognosy, (4) bacteriology, sanitation and hygiene, (5) practice of pharmacy. There will be no "practical" or laboratory work such as that given by state board examiners.

Three hours' work will be permitted on the 10 questions, and question subdivisions, covering each subject. No questions will be optional. It seems likely that careful preparation and thorough professional knowledge will be needed to make a high score on the examination. Candidates who fail the first time will not be permitted to take more than one of the subsequent examinations.

The examinations are open to all male citizens of the United States who are graduates of acceptable schools or colleges of pharmacy in the United States and Canada requiring four years of instruction for graduation, and who will not be over 32 years of age at the time it will be possible to offer a commission.

Candidates' applications from within the limits of the United States received after January 10 will not be considered. Accepted candidates will be notified where to report for the examinations. Convenient locations are being chosen throughout the country.

Timely Tips on

Expectorants

WINTERTIME COUGHS REQUIRE A VARIETY OF PREPARATIONS TO FILL PHYSICIANS' NEEDS

by MELVIN W. GREEN

CHAIRMAN, PHARMACEUTICAL RECIPE BOOK COMMITTEE

THE MODERN physician realizes that the efficacy of an expectorant depends upon the correct correlation of the type of drug with the particular kind of cough. He realizes also that the use of the same expectorant may not be advisable in different stages of the disease. Now that the winter season is here, the pharmacist will be called upon frequently to advise with the physician concerning expectorants and new vehicles for them. The pharmacist can render such a service best if he has a better understanding of the uses and limitations of such preparations.

Four distinct types of cough can be recognized: the "hacking," non-productive cough, the "tight" cough with little tenacious mucus, the "wheezing" cough which may be either dry or productive, and the "loose" cough with an abundance of sputum. From this it can be seen that there may be times when an increase in the quantity of mucous secretion is desirable to lubricate the irritated tissues while at other times it may be preferable to suppress the cough reflex by rather drastic means.

It must be borne in mind constantly that a cough is not a disease in itself but is often the symptom of serious ills. It is this complexity of the "common cough" coupled with the many attending dangers which should discourage self-medication and encourage closer coöperation between the physician and the pharmacist.

Many pharmacologists and clinicians have classified the expectorants, but one of the most useful schemes breaks down these drugs into sedative, stimulant and anodyne expectorants. The sedative expectorants function by alleviating the irritation in one of several ways. They may depend upon demulcent action as does Syrup of Acacia, or they may increase the flow of mucous which in turn acts to lubricate the tissues. This increased mucous flow may be brought about by the use of expectorant salts such as Ammonium Chloride, Ammonium Carbonate, Potassium Iodide, etc., or by mild nauseants such as Ipecac.

The stimulant or irritant expectorants are also known as aromatic expectorants. They are substances which are excreted by the lungs to a certain extent and are assumed to be capable of stimulating tissue repair. Terpin Hydrate, Creosote preparations and Pine Tar preparations appear in this category.

The anodyne expectorants act by centrally suppressing the cough reflex. Codeine and Morphine are typical of this group. This is the group that must be used with special caution. Since the natural function of the cough is to remove mucus, which is acting as a foreign body, an improper curtailment of its removal may lead to serious consequences. On the other hand, prolonged paroxysms of unproductive coughing are depressing. When the weakening surpasses the danger pursuant to cough suppression, the anodynes are resorted to.

The following is a list of commonly used expectorants classified in keeping with the forementioned plan:

I. Sedative Expectorants
   - A. Demulcents
     - Syrup of Acacia
     - Syrup of Glycyrrhiza
   - B. Expectorant Salts
     - Ammonium Carbonate
     - Ammonium Chloride
     - Calcium Iodobehenate
     - Potassium Acetate

Potassium Citrate
Potassium Iodide
Sodium Citrate
Syrup of Hydriodic Acid

C. Nauseants
Antimony and Potassium Tartrate
Apomorphine Hydrochloride
Brown Mixture
Syrup of Ipecac

II. Stimulant Expectorants
Calcium Creosotate
Creosote
Creosote Carbonate
Elixir of Terpin Hydrate
Eucalyptol and Oil of Eucalyptus
Guiacol
Syrup of Pine Tar
Syrup of Squill
Terpin Hydrate

III. Anodyne Expectorants
Codeine Phosphate
Codeine Sulfate
Ethylmorphine Hydrochloride
Morphine Sulfate

A few pharmaceutical factors should be considered when attempting to combine expectorant drugs with each other or with vehicles:

Ammonium Chloride: It must never be combined with hydroxides or carbonates since free ammonia may be liberated. It may be most conveniently dispensed with Syrup of Citric Acid, Syrup of Cherry, Syrup of Wild Cherry, Syrup of Acacia, Syrup of Tolu Balsam, Brown Mixture, and Elixir of Glycyrrhiza as vehicles. Many of these vehicles have the addtional advantage that they are mildly expectorant themselves.

Ammonium Carbonate: Because of its incompatibility with acids, Ammonium Carbonate should never be dispensed with acid syrups such as Syrup of Squill, Syrup of Citric Acid or Syrup of Ipecac. This salt is sufficiently alkaline to precipitate many alkaloidal bases from their salts, but atropine and codeine are not affected.

Incompatibilities

Iodides: Some alkaloids are precipitated by iodides. Further, if free iodine is liberated from the iodide, this may cause the precipitation of alkaloids. It should also be borne in mind that iodides are therpeutically incompatible with many pathological conditions such as tuberculosis.

Because of the frequency with which these medicaments are prescribed, the physician often finds it psychologically sound to change preparations. Consequently the pharmacist is often called upon to suggest and to supply new vehicles and new preparations. The new *Recipe Book* offers several expectorant preparations. Ammonium Chloride is offered in several combinations. It is available in combination with Syrup of Citric Acid and Syrup of Tolu, under the caption Syrup of Ammonium Chloride. It is also available as Ammonium Chloride Mixture, Ammonium Chloride and Potassium Iodide Mixture, Ammonium Chloride and Ipecac Mixture and Brown Mixture with Ammonium Chloride. The following formula for Ammonium Chloride and Potassium Iodide Mixture, taken from the formulary of a prominent eastern hospital, is typical of the group.

Potassium Iodide	15 Gm.
Ammonium Chloride	30 Gm.
Fluidextract of Glycyrrhiza	150 cc.
Distilled Water, a sufficient quantity,	
To make	1000 cc.

Dissolve the Potassium Iodide and Ammonium Chloride in 500 cc. of distilled water, add the Fluidextract of Glycyrrhiza and finally sufficient distilled water to make the product measure 1000 cc.

Average Dose—Metric, 4 cc.—Apothecaries, 1 fluidrachm.

Potassium Iodide is judiciously combined with

other expectorants to form expectorant mixtures, three formulas for which are presented by the *Recipe Book*. A very pleasant formula for children is Ammoniated Mixture of Senega, Ipecac and Paragoric.

Armed with this information and a knowledge of the prescribing habits of the neighboring physicians, the pharmacist will be in a position to render a real service in the field of expectorant prescribing.

Medalist Proposes

HIGHER PROFESSIONAL STANDARDS

by ROBERT P. FISCHELIS

1943 REMINGTON MEDALIST

A PRE-PROFESSIONAL EDUCATION AND CERTIFIED PHARMACEUTICAL SPECIALISTS TO MEET POSTWAR NEEDS SUGGESTED BY MEDALIST AT REMINGTON AWARD CEREMONY

WHILE the Remington Medal Award confers a great honor upon the recipient, its purpose is also to commemorate the labors of a man whose leadership in the profession of pharmacy was the most outstanding of his time. Joseph P. Remington was a man of many talents. Charles H. LaWall, his pupil, assistant, co-worker and successor, described him as "genial and eloquent, a keen student of human nature, a lover of the beautiful in art, music and literature, possessed of a fund of scientific knowledge of unusually broad scope, and with it all a consciousness of power that made him an acknowledged leader among men—these are some of the qualities that were combined in him to make a great teacher, a capable executive and a Christian gentleman, clean-minded and clean-hearted."

The twenty-five years that have passed since Remington was called to rest have been filled with stirring events which have left their mark upon American pharmacy. The period ahead of us looms as one of tremendous progress in the further conquest of disease. At this very moment we are in the midst of revolutionary changes in the treatment of diseases which have hitherto baffled those who have devoted their lives to the development of the healing arts. Apparently this global war is not to be without its compensations in the form of improved methods of fighting and preventing disease.

It is necessary for American pharmacy to gear itself to these revolutionary changes and to ask itself frankly and incisively whether it is prepared to play the part it should be expected to play in the general scheme of making these advances in medical science available adequately to all the people.

Neither pharmacy nor medicine can isolate itself from world affairs. Their services are part and parcel of the more abundant life for which nations all over the world are struggling and for which men of the United Nations are today making the supreme sacrifice in distant places.

The lofty idealism of the professions engaged in providing medical care must be translated into the practical performance of making the fruits of modern medical science available to the sick, the halt and the lame in all stations of life at a cost which they can afford to bear and under a system of distribution which will preserve their self-respect.

This is not a problem which the professions can solve alone. It is a problem for the people to solve through their chosen representatives in coöperation with the professions engaged in providing medical care. Members of the health professions must approach this problem in their dual capacity as citizens and as experts in this sphere of activity. As citizens they have every right to express opinions on the methods by which medical care should be made fully available and advocate the methods of distribution which to them seem best.

As professional men and women, skilled in one or more of the sciences or arts which constitute the practice of medicine in its broadest aspects,

it is their duty to watch over the quality of medical care dispensed, regardless of the system of distribution which may be developed, and to achieve by moral suasion and good example that excellence of accomplishment which cannot be secured by legislative fiat or regimented compulsion.

I am not one of those who subscribes to the oft-repeated statement that any change in the method of distributing and paying for medical care will lower its quality. I am aware of the indifference which job security and regimentation breed in some individuals who are not overly ambitious. But I am also aware of many complaints of careless practice, incompetence and cold disregard of the human being seeking relief from mental or physical ills under the present system of private practice. I also know that for many years the medical profession has exercised a firm control over admission to that profession and it has had a very large number of young men and women with high qualifications to choose from. Whether or not the aptitude and intelligence tests employed have served to select the combination of intellectual capacity, technical aptitude, character and social conscience required to make the kind of a doctor we like to read about, is still an open question. Certainly the right kind of doctor will give the best he has in him at all times and under all conditions and the same thing holds true for other professions in the health field.

After all, it is the men and women who enter these professions rather than the machinery set up for the discharge of their professional functions which determine the quality of medical care made available for the American people.

Pharmacy, like medicine, must exercise due care in the selection of its future manpower. The reduction in professional personnel caused by the war with its consequent elimination of some drug stores is not without its compensations. From all over the country comes the information that pharmacists are so busy practicing pharmacy in the drug stores of America that they have less and less time available for the extraneous merchandising activities resorted to in order to keep their shops going on a profitable basis, and they like it. This is a sign that in spite of the jokesmiths, pharmacists do place first things first, and the first duty of the pharmacist is to supply medicines.

In Remington's apprenticeship days pharmacists carried on considerable drug manufacturing in their own establishments, but in his lifetime he witnessed the gradual cessation of production of medicinal compounds in the average retail pharmacy and the increasing emphasis upon the distribution of ready-made standardized and tested products.

Like many others he did not welcome this transfer of functions to the large laboratory but realized that a change of function called for a readjustment of ideas and ideals to make them fit new conditions.

It soon became evident that the readjustment in pharmacy, like the readjustment in medicine, called for more and not less education of the pharmacist. Yet the educational program for pharmacists lagged behind that of medicine and dentistry and although rapid strides have been made in the past twenty years we have not had quite the courage of our sister professions in eliminating dead wood from the pharmaceutical curriculum, establishing pre-pharmaceutical education on a collegiate level and getting rid of unnecessary teaching institutions and incompetent, unprogressive or unproductive faculty members.

But all this is on the way and it is being hastened by war conditions. We ought to refrain from giving hypodermics to institutions and faculties which are not attuned to the demands of modern medical and pharmaceutical practice and concentrate upon the survival of those institutions which are willing to demand high standards of admission and support faculties whose outlook experience, ideals and abilities will stimulate students to look upon the practice of pharmacy as a public service as well as a method of earning a living.

Now is the time to seriously consider improvement of the future personnel of our profession by demanding pre-professional cultural training as is done in medicine and dentistry. We should hold the present minimum four-year course open for the returning war veterans who have partially completed the pharmacy course or who may wish to enter it upon completing their war service, but of all new students who have not had war service, pre-professional education on a college level should be required. This will put a stop to any effort to lower the present standard pharmacy course under the guise of doing something for the war veteran. The veteran will have the advantage of the present course, which like most other college courses will doubtless continue in a modified form of ac-

Dr. ROBERT P. FISCHELIS (right) receives the Remington medal award from Dr. Curt P. Wimmer of Columbia University.

celeration, while new students will be required to take the longer course. It is conceivable that under a partially accelerated program a pre-pharmacy college year plus the present standard four-year course could readily be completed in forty-eight months. The early inauguration of such a program will keep the number of new pharmacists down to a replacement level which will prevent the establishment of unnecessary numbers of new pharmacies. This in turn will keep the emphasis in our drug stores on professional activity and hold the remuneration of employed pharmacists at a level which is commensurate with the professional service rendered, thus making the profession once more attractive to men and women who now seek other outlets for their abilities.

Education Still Lags

Had pharmaceutical education kept pace with medical and dental education and placed its pre-professional basic training on a separate basis rather than combining it with the professional training program, pharmacists would have received more equitable treatment by the Selective Service Administration and by the Military Services in the commissioning of personnel.

It has been difficult to convince these authorities that the college-trained pharmacist with a baccalaureate degree and some years of practical experience in prescription or manufacturing or hospital pharmacy, or in the wholesale drug and medical supply industry is a competent specialist who is in a much better position to render service as a medical supply officer, or as supervisor of pharmaceutical work in military hospitals than the medical doctors who are assigned to such duties. With the demand for medical doctors in the armed services as great as it is and the civilian population being deprived more and more of the services of physicians, it seems only logical that medical officers in the armed services should be utilized for strictly medical duties and that supervision of pharmacies and supply activities should be assigned to capable commissioned pharmacists. It is time that any prejudice against the assumption of pharmaceutical duties by pharmacists should be laid aside in the public interest. The Congress of the United States has unanimously approved the creation of a Pharmacy Corps in the United States Army. What good reason can be advanced for failure to extend the organization of such a corps immediately to the Army of the United States? That is where commissioned pharmacists are needed today to relieve commissioned physicians of pharmaceutical and medical supply duties so that they may practice medicine either in the Army or be returned to civilian practice where they are sorely needed.

Responsibility Great

There is abroad in this whole great field of pharmaceutical endeavor an intense realization of the fact that pharmacy's responsibility for the preservation of health and life is on the same level of importance as that of medicine. It is a responsibility that must not be trifled with.

As science unfolds the causes of diseases, it also points the way to their prevention and cure. The day of mysticism and hocus pocus in medicine is rapidly disappearing. As it fades away we become conscious of a reduction in the number of medicaments, but the new single drug remedies are usually complex and difficult to produce. They are often as dangerous as they are beneficial. Their course from highly expensive laboratory curiosities to commercially available remedies is not only intricate but costly. To make such remedies universally available in quantities and at

costs which are not prohibitive, there must always be available a combination of scientific knowledge, adequate finances and a keen insight into the economics of distribution. It is in this phase of providing medical care adequately that many pharmacists find the most satisfying outlet for their abilities.

There will always be a demand for drugs and combinations of drugs required for the symptomatic treatment of the more common ailments and for diseases whose cause or specific treatment has not been discovered. The compounding of prescriptions for such use and the storing and distribution of specific remedies and making available full information on drug therapy in general will continue to occupy the hospital pharmacist, the prescription specialist and the neighborhood apothecary.

To distinguish these specialists from druggists who prefer to run variety shops with a bit of profitable pharmaceutical activity carried on as a side line, the time has come to emulate our medical specialists and establish Specialty Boards which will certify to the competence of such state licensed pharmacists as have met the higher qualifications which warrant their designation as Manufacturing Pharmacists, Hospital Pharmacists and Prescription Specialists.

The public will naturally gravitate to the well-informed and professionally competent pharmacist whether he makes his headquarters in a store on some prominent business corner or whether he chooses to operate his laboratory in an office building or as part of a group clinic or health center.

Broadened Contacts

The first aid which the American public was accustomed to receive in a pharmacy in Remington's early days is no longer expected today. Hospital and clinic facilities are now more adequate and except for dire emergencies no medical attention is expected from the pharmacist. There is expected; however, considerable information as to availability of medical facilities and practitioners. The neighborhood pharmacist today must not and does not attempt to replace the doctor who has departed for military service, but it is his duty to keep informed of the availability of physicians and medical services so that he can direct inquirers to the places where they can obtain the necessary help. To this extent the pharmacist is the guardian of the health of his community and therefore his professional contacts must be broadened to include social welfare agencies as well as medical organizations and departments of health.

Unity of Purpose

Prior to this date two years ago the American people were divided on the question of the extent of aid to be given to our present allies in this second World War. The events of December 7, 1941, galvanized our people into a united force with a single objective. We are all proud of the achievements of our military forces and of those who have produced and distributed the enormous supplies of fighting engines, ammunition and matériel which are now contributing so largely to the winning of this war for the Allied Nations.

Pharmacy and the drug industry have also worked with a unity of purpose during this period. Pharmacists in the War Production Board, in the Army and in the Navy have carried the responsibility for the production and supply of necessary drugs to the Services, to our Allies and to American civilians. So far they have met the essential requirements of all concerned by making necessary adjustments and by intelligent planning. In this they have had the voluntary coöperation of manufacturers, wholesalers and retail dispensers. If such team work is continued after the war ends, there should be little if any disruption of the distributive processes in the drug industry in the reconstruction period.

With its educational program adjusted to produce men and women who have a broad social and public health background as well as technical training; with a method of identifying specialists in manufacturing pharmacy, hospital pharmacy and prescription pharmacy and with leadership that recognizes the limitations as well as the great potentialities for public good inherent in the normal functions of pharmacy, the American public may expect from our profession in the future, as in the days of Remington, responsible, enlightened and effective service in its behalf.

War Brings More

CHANGES IN NATIONAL FORMULARY

MANY of the National Formulary changes authorized in the Third Supplement on the following pages have been brought about by wartime conditions. Perhaps the most far-reaching is the new monograph on Propylene Glycol. Permission is given to use Propylene Glycol to replace either all or part of the Glycerin in the preparations listed. The resulting products should be no less satisfactory than those made from formulas in N. F. VII, although they will not have the same viscosity and body. Preparations listed in which the replacement is not satisfactory either throw down precipitates when Propylene Glycol is used, or contain Glycerin as a principal ingredient.

The slightly acrid taste of Propylene Glycol, usually masked by other ingredients in a preparation, may be eliminated eventually through improved methods of manufacture.

Completion of the difficult work of developing an official replacement for Glycerin comes at a time when restrictions on Glycerin are much less stringent than at any time during the past several months. The War Food Administration has now recognized drug manufacturers as producers of essential military and civilian products and has allocated 100% of the December requirements for pharmaceutical use. Because of the tremendous demands for Glycerin in the munitions and other war industries, however, further use of Propylene Glycol may be necessary before the war has ended. In some cases Propylene Glycol may find a place in pharmacy even when unlimited supplies of Glycerin are again available.

To conserve further the use of Glycerin under present conditions, it has been deleted from the formulas for Compound Elixir of Euphorbia, Elixir of Hydrangea and Lithium, and Compound Elixir of Serenoa and Sandalwood. To replace the Glycerin, increased quantities of Sucrose are provided in the formulas.

Because of the shortage of spice drugs and certain essential oils, the replacement of Oil of Cinnamon by Cinnamic Aldehyde, and of Oil of Clove by Eugenol, have also been authorized.

Imports of the brown, oil-bearing bark from the evergreen cinnamon trees which grow mainly in Cochin China have been drastically curtailed by the war. As the synthetic Cinnamic Aldehyde made official in the Third Supplement is the same as the active ingredient in the natural oil, pharmacists will notice little change in products.

The plump, reddish brown flower buds garnered from evergreen clove trees by the natives of British East Africa, Zanzibar, Madagascar, the Dutch East Indies, British Malaya and similar regions have likewise been cut off from American markets. Since natural oil of clove distilled from the dried flower buds contains at least 82% of the active ingredient, Eugenol, the change to synthetic Eugenol in the present emergency is a natural one.

In more peaceful days, the peasants of central Europe often eked out their scanty livelihood by gathering the flower heads of Wolf's Bane, or Arnica, from the mountain meadows and upland moors, from whence it eventually reached the Charley-horse's and bruises of sporting America by way of that hardy perennial, Tincture of Arnica. As much of this official Arnica has gone off the market, the Third N. F. Supplement opens the door to closely related species, such as *Arnica sororia* and *Arnica fulgens*, which grow in our own west central states.

As lactose has also been short in supply, it can now be replaced by the mixture of sucrose and starch specified in the Third Supplement. Most of our lactose is produced as a by-product of cheese. Thus pharmacy is caught between the government limitation of cheese production on the one hand, and the heavy requirements of government agencies for lactose on the other.

As synthetic Papaverine Hydrochloride has been fully established as equivalent to its natural counterpart from Asiatic opium, the man-made product now becomes official.

Under reagent chemicals, a new monograph is given on Isopropyl Alcohol which will later be made the basis of a monograph for inclusion in the text of the National Formulary itself. For the present, however, it should be emphasized that the monograph applies only to Isopropyl Alcohol when used as a reagent.

THIRD SUPPLEMENT
to the
NATIONAL FORMULARY
SEVENTH EDITION

I. PERMISSIVE REPLACEMENTS

Glycerin, Replacement of in National Formulary Preparations

Until further notice Glycerin in the National Formulary preparations indicated below may be replaced in whole or in part by Propylene Glycol.

NOTE: Attention is called to the fact that preparations in which Glycerin is replaced in whole or in part by Propylene Glycol will not possess the same viscosity and body as preparations made in accordance with the formulas in N. F. VII.

Preparations in which Glycerin May Be Satisfactorily Replaced in Whole or in Part by Propylene Glycol

Elixir Aminopyrinæ
Elixir Barbitali
Elixir Calcii et Sodii Glycerophosphatum
Elixir Euphorbiæ Compositum
Elixir Gentianæ
Elixir Hydrangeæ et Lithii
Elixir Pepsini
Elixir Pepsini et Bismuthi
Elixir Pepsini et Rennini
Elixir Taraxaci Compositum
Elixir Terpini Hydratis, N. F. VII
Elixir Terpini Hydratis, N. F. VII, Supplement II
Elixir Viburni Opuli Compositum
Elixir Viburni Prunifolii
Gargarisma Potassii Chloratis cum Ferro
Liquor Ferri et Ammonii Acetatis
Liquor Ferri Peptonati
Liquor Ferri Peptonati et Mangani
Liquor Iodi Phenolatus
Liquor Nucis Vomicæ Alkaloidorum
Liquor Sodii Boratis Compositus
Liquor Sodii Phosphatis
Lotio Calaminæ
Mistura Rhei et Sodæ
Pasta Pectini
Pasta Pectini Tenuis
Syrupus Hypophosphitum
Unguentum Resorcinolis Compositum

Preparations in which Glycerin May Not Be Satisfactorily Replaced by Propylene Glycol

Cataplasma Kaolini
Elixir Ferri et Strychninæ Phosphatum
Elixir Ferri et Strychninæ
Elixir Glycerophosphatum Compositum
Fluidglycerata
Glycerata
Glycerogelatina
Mistura Opii et Glycyrrhizæ Composita
Syrupus Ammonii Hypophosphitis
Syrupus Calcii Lactophosphatis

Elixir Euphorbiæ Compositum

Until further notice the following formula and directions may be used in the manufacture of Compound Elixir of Euphorbia. The rest of the monograph remains as in N. F. VII, page 123.

ELIXIR EUPHORBIÆ COMPOSITUM
Compound Elixir of Euphorbia

Elix. Euphorb. Comp.	Hare's Elixir
Fluidextract of Euphorbia Pilulifera	50 cc.
Fluidextract of Lobelia	7 cc.
Sodium Bromide	35 Gm.
Sodium Iodide	35 Gm.
Spirit of Glyceryl Trinitrate	10 cc.
Compound Tincture of Cardamom	50 cc.
Oil of Peppermint	1 cc.
Sucrose	190 Gm.
Alcohol	200 cc.
Distilled Water, a sufficient quantity, To make	1000 cc.

Mix the spirit of glyceryl trinitrate and the oil of peppermint with the alcohol, then add the fluidextracts and the compound tincture of cardamom. Dissolve the salts in 400 cc. of distilled water, and add this solution gradually with agitation to the alcoholic solution; dissolve the sucrose in this mixture, add sufficient distilled water to make the product measure 1000 cc. and filter, if necessary, until the product is clear.

Elixir Hydrangeæ et Lithii

Until further notice the following formula and directions may be used in the manufacture of Elixir of Hydrangea and Lithium. The rest of the monograph remains as in N. F. VII, page 128.

ELIXIR HYDRANGEÆ ET LITHII
Elixir of Hydrangea and Lithium

Elix. Hydrang. et Lith.	
Hydrangea, in moderately coarse powder	400 Gm.
Lithium Benzoate	26 Gm.
Lithium Salicylate	26 Gm.
Sucrose	180 Gm.
Compound Spirit of Orange	4 cc.
Alcohol, **Distilled Water,** each, a sufficient quantity, To make	1000 cc.

Dissolve the compound spirit of orange in 300 cc. of alcohol and add 600 cc. of distilled water. Use this mixture as Menstruum I for extracting the hydrangea by Process P for Tinctures (see page 439), and a mixture of 1 volume of alcohol and 2 volumes of water as Menstruum II. Dissolve the sucrose and lithium salts in the first 840 cc. of percolate, and add a sufficient quantity of the percolate to make the product measure 1000 cc. Mix well and filter, if necessary, until the product is clear.

Elixir Serenoæ et Santali Compositum

Until further notice the following formula and directions may be used in the manufacture of Compound Elixir of Serenoa and Sandalwood. The rest of the monograph remains as in N. F. VII, page 137.

ELIXIR SERENOÆ ET SANTALI COMPOSITUM

Compound Elixir of Serenoa and Sandalwood

Elixir. Seren. et Santal. Comp.

Compound Elixir of Saw Palmetto and Santal — Sabal-Santal Elixir

Fluidextract of Serenoa	**250 cc.**
Fluidextract of Zea	**250 cc.**
Oil of Santal	**2 cc.**
Compound Spirit of Orange	**5 cc.**
Sucrose	**130 Gm.**
Alcohol	**175 cc.**
Distilled Water, a sufficient quantity, To make	**1000 cc.**

Mix the oil of santal and the compound spirit of orange with 125 cc. of alcohol, add the fluidextract of serenoa, the fluidextract of zea, the sucrose previously dissolved in 200 cc. of distilled water, and sufficient distilled water to make the product measure 950 cc.; mix well, allow the mixture to stand 24 hours and filter, if necessary, until the product is clear. Then add 50 cc. of alcohol.

Oil of Cinnamon, Replacement of

Until further notice an equal volume of Cinnamaldehyde (this Supplement, page 389) may be used in place of Oil of Cinnamon in all National Formulary preparations in which the latter named Oil is an ingredient.

This notice applies also to Infusion of Digitalis and Syrup of Ipecac and Opium, in which the Spirit of Cinnamon may be replaced by an equal amount of a 10 per cent by volume solution of Cinnamaldehyde in Alcohol.

Oil of Clove, Replacement of

Until further notice an equal volume of Eugenol may be used in place of Oil of Clove in all National Formulary preparations in which the latter named Oil is an ingredient.

Pepsin, Replacement of Lactose as a Diluent in

Until further notice a mixture consisting of not less than 96.5 per cent of sucrose and not more than 3.25 per cent of starch may be used as a replacement for lactose as a diluent for Pepsin.

NOTE: Confectioner's Powdered Sugar meeting General Requirements D-1 and Detail Requirements E-3, type 1 (b) (2) of Federal Specification [(JJJ-S-791A) February 20, 1943, Federal Stock Catalog IV (part 5) Federal Specification for Sugar; Beet or Cane] may be considered as complying with the requirements of the diluent specified above for Pepsin.

Syrupus Ephedrinæ Sulfatis

Until further notice the following formula and directions for preparation may be used in the manufacture of Syrup of Ephedrine Sulfate. The rest of the monograph remains as in N. F. VII, page 405.

SYRUPUS EPHEDRINÆ SULFATIS

Syrup of Ephedrine Sulfate

Syr. Ephed. Sulf.

Ephedrine Sulfate	4.0	Gm.
Citric Acid	1.0	Gm.
Solution of Amaranth	4.0	cc.
Caramel	0.4	Gm.
Oil of Lemon	0.125	cc.
Oil of Orange	0.25	cc.
Benzaldehyde	0.06	cc.
Vanillin	0.016	Gm.
Alcohol	25.00	cc.
Sucrose	800.00	Gm.
Distilled Water, a sufficient quantity, To make	1000.00	cc.

Dissolve the ephedrine sulfate, the citric acid, and the caramel in 450 cc. of distilled water and add the oil of lemon, the oil of orange, the benzaldehyde and the vanillin previously dissolved in the alcohol. To this add the solution of amaranth and the sucrose, and dissolve the latter by agitation. Finally add sufficient distilled water to make the product measure 1000 cc.

Syrupus Pini Albæ Compositus

Revise the statement on page 6 in the Second Supplement to the National Formulary Seventh Edition, to read as follows:

Until further notice, the glycerin may be replaced with an equal volume of water, and the quantity of sucrose increased to 700 Gm. in the formula for Compound Syrup of White Pine.

II. REVISIONS OF MONOGRAPHS

The following revision of monographs in N. F. VII are effective as of December 15, 1943:

AMPULLÆ AQUÆ REDESTILLATA, page 39—Change the paragraph headed **"Other tests"** in this monograph to read as follows:

Other tests—The water from ampuls of redistilled water responds to the tests for reaction, chloride, sulfate, calcium, metals, ammonia, carbon dioxide, oxidizable substances, and pyrogens as given under redistilled water (see page 54).

ANETHOL, page 49—Change the paragraph headed **"Index of Refraction"** to read as follows:

Refractive index—The refractive index of Anethol is not less than 1.557 and not more than 1.561 at 25° C.

AQUA REDESTILLATA, page 54—Add the following paragraph to the monograph on Redistilled Water:

Pyrogens—Redistilled Water meets the requirements of the *Pyrogen Test*, U. S. P. XII.

ARNICA, page 57—Change the first paragraph of this monograph to read as follows:

Arnica is the dried flower head of *Arnica montana* Linné and related species of *Arnica* (Fam. *Compositæ*).

CALAMUS, page 70—Append the note following the definition in this monograph to read as follows:

Calamus intended for extractive preparations may be unpeeled. Such unpeeled Calamus yields not more than 2 per cent of acid-insoluble ash, and in all other respects meets the requirements for peeled Calamus.

FLUIDEXTRACTUM BUCHU, page 175—Delete the rubric statement in the first paragraph and the entire paragraph headed **"Assay"** in this monograph. Revise the last sentence in the directions for preparation to read as follows:

Adjust the concentrated fluid by dilution with alcohol or a mixture of alcohol and water so that the Fluidextract contains 75 per cent, by volume, of C_2H_5OH.

FLUIDEXTRACTUM CUBEBÆ, page 179—Delete the rubric statement in the first paragraph and the entire paragraph headed **"Assay"** in this monograph. Revise the last paragraph in the directions for preparation to read as follows:

Adjust the concentrated fluid by dilution with alcohol or a suitable mixture of alcohol and water so that the fluidextract contains 70 per cent, by volume, of C_2H_5OH.

FLUIDEXTRACTUM JUNIPERI, page 186—Change the second sentence in the first paragraph of this monograph to read as follows:

Use alcohol as the menstruum, macerate the drug for 24 hours, and percolate rapidly.

FLUIDEXTRACTUM THYMI, page 194—Change the second sentence in the first paragraph of this monograph to read as follows:

Use a mixture of 3 volumes of alcohol and 1 volume of water as a menstruum, macerate the drug for 48 hours, and percolate at a moderate rate.

LIQUOR MERBROMINI, page 253—Change the first paragraph in this monograph to read as follows:

Solution of Merbromin yields from each 100 cc. not less than 1.8 Gm. and not more than 2.2 Gm. of anhydrous merbromin. The anhydrous merbromin assayed as directed under Merbromin yields not less than 24 per cent and not more than 26.7 per cent of Hg, and not less than 18 per cent and not more than 21.3 per cent of Br.

Revise the directions for preparation to read as follows:

Dissolve the merbromin in sufficient water to make the finished product measure 1000 cc.

Delete the paragraphs headed **"Assay for Bromine"** and **"Assay for Mercury"** and add the following paragraph.

Assay for mercury and for bromine—Evaporate a convenient volume of Solution of Merbromin to dryness on a water bath. The powdered merbromin so obtained meets the requirements for mercury and bromine when assayed according to the procedures found under Merbromin, page 285.

LIQUOR MERBROMINI CHIRURGICALIS, page 254—Change the first paragraph, the formula and directions for preparation in this monograph to read as follows:

Surgical Solution of Merbromin yields from each 100 cc. not less than 1.8 Gm. and not more than 2.2 Gm. of anhydrous merbromin. The anhydrous merbromin assayed as directed under Merbromin yields not less than 24 per cent and not more than 26.7 per cent of Hg, and not less than 18 per cent and not more than 21.3 per cent of Br.

Merbromin	20 Gm.
Water	350 cc.
Acetone	100 cc.
Neutralized Alcohol, a sufficient quantity, To make	1000 cc.

Dissolve the merbromin in the water. Add the acetone and sufficient neutralized alcohol to make the product measure 1000 cc.

Delete the paragraphs headed **"Assay for Bromine"** and **"Assay for Mercury"** and add the following paragraph.

Assay for mercury and for bromine—Evaporate a convenient volume of Surgical Solution of Merbromin to dryness on a water bath. The powdered merbromin so obtained meets the requirements for mercury and bromine when assayed according to the procedures found under Merbromin, page 285.

PAPAVERINÆ HYDROCHLORIDUM, page 309—Change the first paragraph in this monograph to read as follows:

Papaverine Hydrochloride is the hydrochloride of an alkaloid obtained from Opium, or produced synthetically.

III. ADDITIONS TO N. F. VII

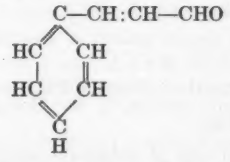
The following monographs are admitted to N. F. VII as of December 15, 1943.

CINNAMALDEHYDUM

Cinnamaldehyde

Cinnamal.

Cinnamic Aldehyde Cinnamyl Aldehyde



C_9H_8O Mol. wt. 132.15

Cinnamaldehyde contains not less than 98 per cent of C_8H_7CHO.

Description—Cinnamaldehyde is a yellow, strongly refractive liquid, having an odor resembling that of oil of cassia, and a burning, aromatic taste.

Solubility—Cinnamaldehyde is soluble in about 700 parts of water and is miscible with alcohol, chloroform, ether, and with fixed or volatile oils. It is readily soluble in 7 volumes of 60 per cent alcohol.

Specific gravity—The specific gravity of Cinnamaldehyde is not less than 1.048 and not more than 1.052 at 25° C.

Refractive index—The refractive index of Cinnamaldehyde is not less than 1.618 and not more than 1.623 at 20° C.

Chlorinated compounds—To 1 cc. of Cinnamaldehyde in a large test tube, add 10 cc. of isopropyl alcohol, 1 cc. of nitric acid (1 in 2), and 1 cc. of silver nitrate solution (1 in 10), shaking well after the addition of each reagent. Heat to the boiling point and permit to stand 5 minutes. Any opalescence produced is not greater than that produced by 0.1 cc. of hundredth-normal hydrochloric acid when treated with the same reagents, omitting the Cinnamaldehyde, in exactly the same manner.

Hydrocarbons—Place 10 cc. of Cinnamaldehyde, measured from a pipette, in a 100-cc. Cassia flask and add 75 cc. of a freshly prepared 12 per cent solution of sodium bisulfite previously heated to a temperature of 85° C. Shake the flask vigorously until solution is complete. Then add sufficient sodium bisulfite solution to raise the meniscus within the graduated portion of the neck. There should be no separation of oil.

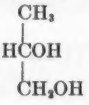
Assay—Triturate 0.1 Gm. of bromophenol blue with 3 cc. of twentieth-normal sodium hydroxide. When solution is complete, dilute to 25 cc. with distilled water. Dissolve 20 Gm. of hydroxylamine hydrochloride in 40 cc. of distilled water, dilute to 400 cc. with alcohol, add with stirring 300 cc. of half-normal alcoholic potassium hydroxide and 2.5 cc. of the bromophenol blue solution, and filter the mixture. Add 75 cc. of this mixture to a flask containing about 1 Gm. of Cinnamaldehyde, accurately weighed, and mix thoroughly. Allow to stand 10 minutes and titrate with half-normal hydrochloric acid to the production of a greenish yellow color. Perform a blank determination using 75 cc. of the hydroxylamine solution. Subtract the number of cc. of half-normal hydrochloric acid used in the titration of the sample from the number of cc. used in the blank. Each cc. of half-normal hydrochloric acid is equivalent to 0.06608 Gm. of C_6H_7CHO.

Storage—Preserve Cinnamaldehyde in well-filled, tight containers protected from excessive heat and light.

GLYCOL PROPYLENUM

Propylene Glycol

Glycol Propyl.

$C_3H_8O_2$  Mol. wt. 76.09

Propylene Glycol contains not less than 97.5 per cent by weight of racemic propanediol-1-2.

Description—Propylene Glycol is a clear, colorless, viscous liquid having a slightly acrid taste. It is practically odorless. It absorbs moisture when exposed to moist air.

Solubility—Propylene Glycol is miscible with water, acetone, and chloroform in all proportions. It is soluble in ether and will dissolve many essential oils, but is immiscible with fixed oils.

Specific gravity—The specific gravity of Propylene Glycol is not less than 1.035 and not more than 1.037 at 25° C.

Distillation range—Propylene Glycol distils completely between 185° and 195° C. when determined by Method II for Boiling and Distilling Temperatures, U. S. P. XII, page 560.

Identification—To 0.5 Gm. of potassium bisulfate in a test tube, add 1 cc. of Propylene Glycol and heat gently. A fruity odor is evolved and no sharp, acrid odor of acrolein is present when heated to dryness.

Ash—Weigh 50 Gm. of Propylene Glycol into a tared platinum dish and heat until the vapor continues to burn after the withdrawal of the flame. Allow the combustion to continue until it dies out. Carefully protect from draughts, especially during the latter part of the combustion. Ignite gently, cool, and weigh. The weight of the residue does not exceed 3.5 mg.

Acidity—Add 1 cc. of phenolphthalein T.S. to 50 cc. of distilled water, then add tenth-normal sodium hydroxide until the solution remains pink for 30 seconds. Now add 10 cc. of Propylene Glycol, accurately measured, and titrate with tenth-normal sodium hydroxide until the original pink color returns and remains for 30 seconds: not more than 0.2 cc. of tenth-normal sodium hydroxide is required.

Chloride—To 10 cc. of a solution of Propylene Glycol (1 in 10) and 1 cc. of diluted nitric acid add 0.5 cc. of silver nitrate T.S. Any turbidity is not greater than that produced by 1.0 cc. of fiftieth-normal hydrochloric acid when treated with the same quantities of diluted nitric acid and silver nitrate T.S. in the same total volume.

Sulfate—Dilute 5 cc. of Propylene Glycol with 15 cc. of distilled water and add 5 drops of hydrochloric acid and 5 drops of barium chloride T.S.: no turbidity is produced.

Heavy metals—Mix 5 cc. of Propylene Glycol with 2 cc. of tenth-normal hydrochloric acid and dilute to 25 cc. with distilled water. The heavy metals limit of Propylene Glycol, determined on this solution, is 5 parts per million, page 594.

Arsenic—A 10-cc. portion of an aqueous solution of Propylene Glycol (1 in 10) meets the requirements of the test for arsenic, page 593.

Assay—Weigh accurately, by means of a weighing pipette, about 0.3 Gm. of Propylene Glycol, transfer into a 100-cc. volumetric flask, and add sufficient distilled water to make 100 cc. Transfer exactly 10 cc. of the resulting solution into a 125-cc. Erlenmeyer flask, add 5 cc. of tenth-molar periodic acid, swirl, and permit to stand for 15 minutes. Add 10 cc. of a saturated solution of sodium bicarbonate followed by 15 cc. of tenth-normal sodium arsenite and 1 cc. of 5 per cent potassium iodide solution. Add sufficient sodium bicarbonate so that at the end-point there will be several grams of solid sodium bicarbonate remaining undissolved, and titrate with tenth-normal iodine, using a 10-cc. microburette. Titrate until the appearance of a faint yellow color. Run a blank using the same quantities of reagents omitting the Propylene Glycol. Subtract the number of cc. of tenth-normal iodine required for the blank from the number of cc. required for the sample. Each cc. of tenth-normal iodine is equivalent to 0.003805 Gm. of racemic propanediol-1-2.

Storage—Preserve Propylene Glycol in tight containers.

The following reagent chemical monographs are admitted to N. F. VII as of December 15, 1943.

Isopropyl Alcohol, *Propanol-2,* is a liquid containing not less than 99 per cent by weight of $CH_3.CHOH.CH_3$. It is a colorless, mobile liquid with a characteristic odor and a slightly bitter taste. Isopropyl Alcohol is miscible in all proportions with water, alcohol, ether and chloroform.

Specific gravity—The specific gravity of isopropyl alcohol is not less than 0.7828 and not more than 0.7869 at 25° C.

Distillation range—Isopropyl alcohol distils completely at not less than 81° and not more than 83° C. when determined by Method I for Boiling and Distilling Temperatures, U. S. P. XII, page 559.

Refractive index—The refractive index of isopropyl alcohol is not less than 1.3770 and not more than 1.3780 at 20° C.

Identification—To 2 cc. of isopropyl alcohol and 3 cc. of distilled water contained in a test tube add 1 cc. of mercuric sulfate T.S. and warm gently. A white precipitate or turbidity is formed.

Residue on evaporation—Evaporate 50 cc. of isopropyl alcohol to dryness on a water bath and heat to constant weight at 100° C. in a drying oven. The weight of the residue does not exceed 2.5 mg.

Acidity—In an Erlenmeyer flask dilute 50 cc. of isopropyl alcohol with 100 cc. of recently boiled distilled water. Add 2 drops of phenolphthalein T.S. and titrate with fiftieth-normal sodium hydroxide until the formation of a pink color which persists for 30 seconds. Not more than 0.7 cc. of fiftieth-normal sodium hydroxide is required.

p-Sodium Periodate, $Na_3H_2IO_6$, is a white odorless powder with a slightly saline taste. It is very slightly soluble in distilled water, but freely soluble in the presence of hydrochloric acid. It is practically insoluble in alcohol, ether, or chloroform.

Loss on drying—When dried to constant weight at 100° C., *p*-sodium periodate loses not more than 1 per cent of its weight.

Reaction—An aqueous solution of *p*-sodium periodate is alkaline to litmus paper.

Chloride and bromide—Mix 1 Gm. of the powdered *p*-sodium periodate with 2 Gm. of sucrose and ignite carefully at a low temperature, taking small portions at a time. Treat the residue with 10 cc. of hot distilled water, and 1 cc. of nitric acid (1 in 5), filter and wash with 10 cc. of hot distilled water. Cool and add 6 cc. of stronger ammonia T.S. Add 20 cc. of 5 per cent silver nitrate solution with constant stirring, dilute to 50 cc., and filter. To 25 cc. of the filtrate add a slight excess of nitric acid. The turbidity is not greater than that produced by 0.25 mg. of chloride ion in an equal volume of solution containing the same quantities of the same reagents (about 0.05 per cent as Cl).

Iodide—Dissolve 1 Gm. of *p*-sodium periodate in a mixture of 10 cc. of distilled water and 10 cc. of diluted sulfuric acid and add 1 cc. of chloroform; no red-purple color should be produced in the chloroform in one minute (about 0.01 per cent I).

Manganese—Add 1 Gm. of *p*-sodium periodate to 200 cc. of distilled water and 10 cc. of nitric acid. Add 2 cc. of phosphoric acid and heat to boiling for 1 minute. No pink color is developed.

Sulfate—Evaporate 2 Gm. of *p*-sodium periodate to dryness with 10 cc. of hydrochloric acid and repeat the evaporation twice with 5-cc. portions of the acid; the residue dissolved in 25 cc. of distilled water shows no more sulfate than corresponds to 0.1 mg. of SO_4 (0.005 per cent), U. S. P. XII, page 645.

Heavy metals—To 2 Gm. of *p*-sodium periodate add 5 cc. of distilled water and 10 cc. of hydrochloric acid and evaporate to dryness on a steam bath. Repeat the evaporation twice with 5 cc. of hydrochloric acid. Dissolve the residue in 20 cc. of distilled water and add 2 cc. of diluted acetic acid. If this is yellowish, discharge the color with 1 or 2 drops of sodium thiosulfate T.S. and add the same quantity to the control. Dilute to 30 cc. with distilled water, transfer to a Nessler tube and proceed with the test for heavy metals in reagents, U. S. P. XII, page 646. The heavy metals limit for *p*-sodium periodate is 20 parts per million.

Iron—The iron in 2 Gm. of *p*-sodium periodate corresponds to not more than 0.04 mg. of Fe (20 parts per million), U. S. P. XII, page 646.

Assay—To a 500-cc. Erlenmeyer flask add about 0.12 Gm. of *p*-sodium periodate, accurately weighed, and add 200 cc. of distilled water, 5 cc. of hydrochloric acid, and 2.5 Gm. of potassium iodide. Swirl the flask gently for 15 seconds and titrate immediately with tenth-normal sodium thiosulfate. When the solution becomes faintly yellow, add 1 cc. of starch T.S. and continue the titration until the solution is colorless. Each cc. of tenth-normal sodium thiosulfate is equivalent to 0.003674 Gm. of $Na_3H_2IO_6$. It shows not less than 98.5 per cent of $Na_3H_2IO_6$.

The following monographs for volumetric solutions are admitted to N. F. VII as of December 15, 1943.

Periodic Acid, Tenth-Molar—Weigh exactly 27.20 Gm. of *p*-sodium periodate and transfer into a 1-liter volumetric flask by the aid of 100 to 150 cc. of distilled water. Add 100 cc. of normal sulfuric acid and dilute to 1000 cc. with distilled water.

Sodium Arsenite, Tenth Normal—

$NaAsO_2 = 129.91$ 6.4955 Gm. in 1000 cc.

Dissolve 4.9455 Gm. of reagent arsenic trioxide, which has been pulverized and dried to constant weight at 100° C., in 75 cc. of normal sodium hydroxide and neutralize any excess alkali with diluted sulfuric acid using phenolphthalein T.S. as an indicator. Add 500 cc. of distilled water containing 25 Gm. of sodium bicarbonate. If a pink color develops, add dropwise diluted sulfuric acid until the color is discharged. Dilute the solution to a volume of exactly 1000 cc. at 25° C. with distilled water.

IV. ERRATA

Make the following corrections in the N. F. VII text:

LIQUOR SODII CITRATIS, page 265—In the last line of the paragraph headed **"Assay"** (page 266) change the chemical formula for Sodium Citrate to read as follows:

$C_3H_4OH(COONa)_3.2H_2O$.

OLEUM SANTALI, page 305—In the paragraph headed **"Assay"** change the formula for calculating the per cent of Santalol to read as follows:

$$\frac{A \times 11.017}{B - (A \times 0.021)} \times [1 - (E \times 0.0016)]$$

ZINCI PHENOLSULFONAS, page 485—Change the empirical formula at the left of the structural formula to read as follows:

$Zn(C_6H_3O_4S)_2.8H_2O$.

This Third Supplement to the National Formulary, Seventh Edition, is issued by action of the Committee on National Formulary, and with the approval of the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION. It is effective from December 15, 1943, until further notice.

JUSTIN L. POWERS, *Chairman*
Committee on National Formulary
American Pharmaceutical Association

Washington, D. C.
December 15, 1943

Reprints of the Third Supplement to the National Formulary, Seventh Edition, may be obtained free of charge by sending a large self-addressed, stamped envelope to:

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Washington 7, D. C.

Report on Historic

A. Ph. A.–N. A. R. D. Conference

SECRETARIES OF TWO NATIONAL ORGANIZATIONS ISSUE FORMAL STATEMENT ON JOINT MEETING

by E. F. KELLY and JOHN W. DARGAVEL

A JOINT meeting of the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION and the Executive Committee of the National Association of Retail Druggists was held in the Continental Room of the Hotel Statler, Washington, D. C., December 12.

Members of the A. PH. A. Council in attendance were: R. P. Fischelis, chairman of the joint meeting, Ivor Griffith, E. F. Kelly, H. A. B. Dunning, George D. Beal, Hugo H. Schaefer, F. E. Bibbins, R. L. Swain, B. V. Christensen, Glenn L. Jenkins, Charles H. Evans, Henry H. Gregg, Patrick H. Costello and Roy B. Cook.

Members of the N. A. R. D. Executive Committee present were: Frank Moudry, J. Otto Kohl, John W. Dargavel, John P. Tripeny, William McConaghy, P. J. Suttlemyre and Edward J. Murphy.

Others present at the meeting by invitation were: George H. Frates, N. A. R. D. Washington representative; Charles R. Bohrer, Assistant to the A. PH. A. Secretary; Representative Carl T. Durham of North Carolina; George A. Bender, editor; and Glenn Sonnedecker, editor.

This conference was the result of an agreement reached at a combined meeting of the two executive bodies, held during the recent convention of the A. PH. A. in Columbus, Ohio, which agreement provided for annual conferences between the executive bodies to be held in the fall of each year.

Objectives of the meeting, as set forth in the resolution adopted at Columbus, were "for the purpose of surveying and studying the resolutions adopted by the A. PH. A. and the N. A. R. D., and by the state and local pharmaceutical associations during the year; and for a competent study of mutual problems of recognized pharmaceutical importance and significance, and for the purpose of each group dealing with these matters as circumstances may indicate."

Since the Columbus meeting, the state and local pharmaceutical associations were invited to submit copies of addresses of their presidents, resolutions adopted at their meetings, and additional topics of importance for the consideration of the joint meeting.

The very extensive agenda was made up after a careful survey of the material submitted, of the resolutions adopted and actions taken by the two national associations. During the meeting, careful consideration was given to each item on this agenda, and from the discussions there was formulated a series of resolutions and statements which expressed the unanimous opinion of the two groups and clearly charted the course of activities to be taken in the future in dealing with these problems which are of vital interest to pharmacy.

In addition to the discussion and consideration of numerous topics upon which no specific action was required at this time, the joint committee adopted the statements and resolutions which follow:

INTERIM COMMITTEE

In view of the number and importance of the subjects which had been considered and actions taken on them during the meeting, it was unanimously agreed that an interim committee should be set up consisting of the presidents, the secretaries, and the chairmen of the executive bodies of the A. PH. A. and N. A. R. D. It will be the function of this committee to continue the activities of the joint meeting in the interim

between meetings, and to consider new problems that may arise. The committee will submit its recommendations to the governing bodies by mail which will facilitate action, and will make it unnecessary to bring the two executive bodies together between annual meetings except in emergencies.

JOINT COMMITTEES

To further promote effective coöperation between the A. PH. A. and the N. A. R. D. in dealing with problems and programs of mutual and continuing interest, it was recommended that the present arrangement be extended under which each association is represented on certain committees of the other association. Under this extended arrangement the N. A. R. D. would have representation on the following committees of the A. PH. A.: National Pharmacy Week, Pharmacy War Activities, Legislation, Professional Relations, Press Relations and Social and Economic Relations.

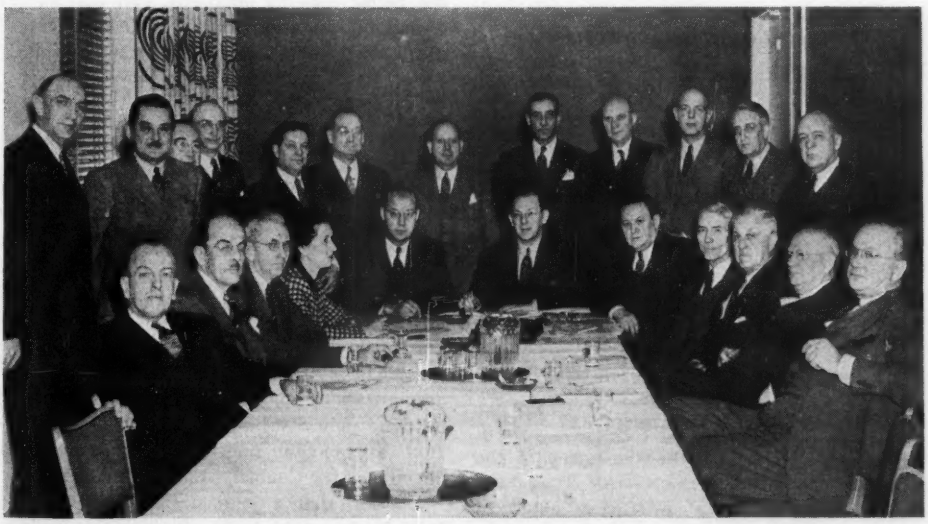
The A. PH. A. would have representation on the following N. A. R. D. committees: National First Aid Week, Drug Store Participation in the War Effort, Legislation, Interprofessional Relations, Public Relations, Socialized Pharmacy and Medicine.

NATIONAL PHARMACY WEEK AND FIRST AID WEEK

The programs under which National Pharmacy Week and National First Aid Week are observed was given extended consideration and a number of recommendations were submitted for the improvement of these programs, so that the public health services of pharmacy may be brought to the attention of the public more effectively. The Committees on Pharmacy Week and on First Aid Week will be requested to submit to their respective associations recommendations for extending and improving their activities.

COLLECTIVE BARGAINING

The joint committee gave consideration to the need for the collective bargaining bill, H.J.R. 102, and it was agreed that the joint committee endorse and support the N. A. R. D.'s campaign for passage of the bill.



A. PH. A. AND N. A. R. D. EXECUTIVES who participated in the historic Washington joint meeting are shown at the conference table. Those standing are Patrick H. Costello, Hugo H. Schaefer, F. E. Bibbins, P. J. Suttlemyre, Glenn L. Jenkins, B. V. Christensen, John P. Tripeny, George H. Frates, William McConaghy, Charles R. Bohrer, Charles H. Evans and George D. Beal. Seated at the table are Edward J. Murphy, J. Otto Kohl, Henry H. Gregg, Miss Billings (conference stenographer), Frank Moudry, Robert P. Fischelis, John W. Dargavel, E. F. Kelly, H. A. B. Dunning, Robert L. Swain and Ivor Griffith.

ALCOHOL TAX AND DRAWBACK

It was reported to the group that the A. PH. A. and the N. A. R. D. had worked jointly on the problem of the tax on ethyl alcohol used in the preparation, preservation and dispensing of drugs and medicines and the tax drawback, on which the groups had recently filed a joint brief with the Senate Committee on Finance. The Revenue Act as recently passed by the House increased the tax from $6.00 to $9.00 per proof gallon, and increased the drawback from $3.75 to $4.00 per proof gallon. It is understood that the Senate Committee on Finance concurred on the increase of the tax, but have increased the drawback to $6.00. Representatives of the two associations were requested to give close attention to this problem, and if possible to seek a simplification of the records required.

PROCUREMENT AND ASSIGNMENT

Following a discussion of Procurement and Assignment for pharmacists, particularly as presented by several state pharmaceutical associations, the joint committee decided to refer this problem to the Pharmacy War Activities Committee for further study and action.

DEFERMENT OF PHARMACY STUDENTS

The present situation with respect to students in pharmacy was reviewed for the information of those attending the joint meeting, and the Pharmacy Committee on War Activities was requested to continue its activities in connection with this problem.

LIMITATION OF THE SALE OF DRUGS

After consideration of the limitation of sales of drugs and medical supplies to pharmacies it was pointed out that the associations had already adopted resolutions covering this subject.

EXTENSION OF HEALTH SERVICES

Resolved, that it shall be the policy of the Executive Committee of the N. A. R. D. and the Council of the A. PH. A., in joint assembly, to seek to develop, maintain and make readily available a standard of professional service for the highest good and greatest protection of the public in accord with the American system of free enterprise under which the patient shall have freedom of choice of physician, pharmacist, dentist, nurse and other health services or persons rendering these services.

THE WAGNER BILL, S. 1161

Resolved, that the Council of the A. PH. A. and the Executive Committee of the N. A. R. D. go on record as being opposed to the attempted regimentation of medical practices and health services and any autocratic principles contained in Title IX of the Wagner-Murray-Dingell Bill, S. 1161.

POST-WAR PLANNING

Resolved, by the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, that inasmuch as both associations have committees on post-war planning, the joint committee recommends that these committees work jointly on post-war problems affecting pharmacy.

PUBLIC RELATIONS

Resolved, by the Executive Committee of the N. A. R. D. and the Council of the A. PH. A. in joint assembly, that we favor a public relations program which will properly interpret pharmacy to the public to the end that its relations with the public may be improved, and that in the formulation of the program, all branches of pharmacy shall have a voice and a responsibility.

RADIO PUBLICITY

Resolved, that the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, endorse the resolution of the A. PH. A., "that it shall be the policy of the AMERICAN PHARMACEUTICAL ASSOCIATION to foster the dissemination of information relative to the services and functions of pharmacy through dignified and conservative radio addresses and dramatizations; and that steps be taken to provide for a series of suitable radio addresses and dramatizations and that a special committee on radio publicity be provided by the ASSOCIATION to function under the supervision and direction of the Council," and be it further

Resolved, that a joint Committee on Radio Publicity be established to work on this project.

RETENTION OF MAXIMUM PRICE REGULATION

Resolved, that the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, favor the general principle of

preventing unwarranted price increases and favor the retention of the General Maximum Price Regulation as the means of controlling prices, so that the provision of essential pharmaceutical services to the public shall not be jeopardized.

OPA REGULATIONS

WHEREAS, the United States Department of Commerce has reported that the increase in price to consumers in the case of items representing drugs and medical supplies has increased only 0.7% in the past twelve months, and

WHEREAS, these prices have been held in line largely due to the efforts of the drug industry itself; therefore be it

Resolved, by the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, that we are opposed to any arbitrary reduction in prices by the Office of Price Administration on commodities where advances have not occurred in prices as they existed in March, 1942.

PROPOSED OPA VITAMIN ORDER

WHEREAS, an attempt is being made by the OPA to reduce the price of vitamins, which action is not justified by price increases because in recent years vitamin prices have steadily decreased; therefore be it

Resolved, by the Executive Committee of the N. A. R. D. and the Council of the A. PH. A. that we enter a vigorous protest with the Price Administrator against the issuance of this vitamin price reduction order, and any other orders of a similar nature.

AMENDMENT OF GMPR RULING 27

Resolved, by the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, that we endorse the N. A. R. D.'s action asking for an amendment to the ruling to make it unnecessary for manufacturers to resort to the courts for injunctions in order to protect their Fair Trade contracts in those cases where the General Maximum Price Regulation interferes with minimum prices established under Fair Trade contracts.

RENT CEILINGS

WHEREAS, there are at present no ceilings on rents for premises housing retail business; and whereas this situation is being taken advantage of by numerous owners of such property; and whereas rent is one of the important cost factors, particularly in the retail industry; now therefore be it

Resolved, by the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, that we urge that the provision for freezing rentals of dwellings and apartments be extended by the proper governmental agencies to cover premises occupied by retail establishments.

GASOLINE AND TIRES FOR DELIVERY

WHEREAS, the reduction in value of gasoline coupons (in many instances to 50% of their original value), and the lack of adequate tire replacements made available to pharmacists for delivery service, and the increased demand for essential delivery service in critical areas have caused almost the complete suspension of essential deliveries of drugs and medical supplies in many areas; therefore be it

Resolved, by the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, that we request of the proper governmental authorities that increased supplies of both tires and gasoline be made available to pharmacists in every instance where such action is warranted.

PHARMACY CORPS

Resolved, by the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, that immediate action be requested of the Medical Department of the U. S. Army to extend the provisions of the Act creating a Pharmacy Corps in the Regular Army to the Army of the United States; inasmuch as this can be done under authority now invested in the Medical Department, and additional Congressional authorization is not required.

PHARMACISTS IN THE NAVY

Resolved, by the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, that the Committee on the Status of Pharmacists in the Government Service be requested to have introduced in Congress legislation seeking to create a commissioned Corps in the Navy for pharmacists, so that adequate and competent pharmaceutical service may be assured to the personnel of the Navy.

FOOD AND DRUG LEGISLATION—PRESCRIPTION LEGEND

Resolved, by the Executive Committee of the

N. A. R. D. and the Council of the A. PH. A., in joint assembly, that wherever possible, adequate directions shall be placed upon the packages of drugs and medicines; and that the prescription legend, "To be used only by or on the direction of a physician," should appear only on the package of those preparations containing dangerous drugs, as defined by the Food, Drug and Cosmetic Administration; and be it further

Resolved, that this resolution shall be brought to the attention of the officials of the Food and Drug Administration, to the manufacturers of drugs and medicines, and to the pharmaceutical law enforcement agencies in the various states.

CONSERVATION OF NARCOTICS

Resolved, by the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, that the AMERICAN PHARMACEUTICAL ASSOCIATION be requested to appoint a committee, which will have among its members proper representation for the N. A. R. D., to consider measures for the conservation of narcotics and to provide for more uniform control of exempt narcotics.

SURPLUS DRUGS

WHEREAS, the public health and welfare would be seriously jeopardized by the indiscriminate disposal and distribution of any surplus drugs, medicines and health supplies which may be in the hands of governmental agencies at the conclusion of the war, be it

Resolved, by the Executive Committee of the N. A. R. D. and the Council of the A. PH. A. in joint assembly, that we shall seek through congressional legislation the establishment of a representative pharmaceutical body to supervise the post-war distribution of drugs, medicines and health supplies, said body to function under adequate legislative and administrative control, and be it further

APPLICATION FOR MEMBERSHIP

American Pharmaceutical Association

Approving of its objectives, I hereby apply for active membership in the American Pharmaceutical Association and subscribe to the "Journal of the American Pharmaceutical Association." Enclosed is $____ for membership dues with subscription to the ☐ Practical Pharmacy Edition at $5; ☐ Scientific Edition at $6; ☐ Both Editions at $7.

Name in Full_____

Number and Street_____

Town_____ State_____

Graduate of_____ Year_____ Degrees_____

I am a registered pharmacist in _____ and am engaged or, in the case of retirement, was engaged as: __ Retailer, __ Wholesaler, __ Manufacturer, __ Drug Importer, __ Teacher, school official or librarian, __ Research Worker, __ Editor, __ Publisher, __ Representative, __ Pharmaceutical Chemist, __ Food and Drug Official, __ Hospital Pharmacist, __ Association Official, __ Pharmacist in Government Service, __ Student.

The applicant named above is recommended by the undersigned two members:

Name_____ Name_____

If the applicant is unacquainted with any member of the Association, the officers will aid in securing the necessary recommendations. This application, with the payment of dues for one year, may be sent to any member of the membership committee, the Secretary, or any officer of the Association.

Date_____

E. F. KELLY, *Secretary*
2215 Constitution Avenue
Washington 7, D. C.

Resolved, that the same policy should be followed with respect to other articles commonly distributed through drug stores; and be it further

Resolved, that it be suggested to the pharmacists of the nation that they make careful surveys of the needs of their communities for critical and scarce drugs, so that they may be fully supplied and carry sufficient reserves to take care of emergencies.

POST-WAR REFRESHER COURSES

Resolved, by the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly, that we recommend that colleges of pharmacy offer, in the post-war period, refresher or other courses for pharmacists returning from service in the armed forces of the nation; and be it further

Resolved, that proposals for financial aid, under a state or federal educational program for returning service men, who had or who had not completed their formal pharmaceutical education, be used to full advantage by colleges of pharmacy in the interest of such returning servicemen; and be it further

Resolved, that every effort be exercised to the end that proposals for any such state or Federal financial aid for education, and legislation providing for such programs, shall include pharmaceutical education; and that such programs be carried out in regularly established colleges of pharmacy with full freedom of selection by the returning service men.

REP. DURHAM COMMENDED

Resolved, that the Council of the A. PH. A. and the Executive Committee of the N. A. R. D., in joint assembly and in the presence of Congressman Durham, express to him our deep appreciation of the great services rendered by him in the successful consummation of our long efforts to establish a Pharmacy Corps in the Regular Army of the United States of America.

As this historic meeting came to a close, there remained no room for doubt as to the position of the two groups on current problems and that a program outlined for complete coöperation of the two organizations in all matters of mutual interest and concern had been formulated. It was agreed that the joint meetings will be held annually in the future in the fall of the year, the meeting places alternating between Washington and Chicago.

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Druggist's Digest

OF NEW FORMULAS, RECENT PHARMACEUTICAL DEVELOPMENTS, AND OTHER PROFESSIONAL DATA

SULFADIAZINE SPRAY PREVENTS COMPLICATION OF COLDS

Prevention of bacterial infections of the sinuses, ears and pharynx following colds may be prevented by use of sulfadiazine spray. Promising results of a controlled clinical and bacteriological study are reported by Drs. David A. Dolowitz, Walter E. Loch, Henry L. Haines, Arthur Ward, Jr., and Kenneth L. Pickrell of the Johns Hopkins Hospital, Baltimore. A 2.5% spray of sulfadiazine in ethanolamines (Pickrell's solution) was used eight to twelve times per day for three days, then five to eight times a day for two or three days more (*J. A. M. A.*, 123: 534).

In a group of nurses who were given the spray as soon as they reported to the infirmary with a cold, only 9.7% developed sinusitis, compared with 30% incidence in a control group. Eight per cent of those receiving the spray developed coughs during treatment, while 44% of the controls, who were treated only with the solvent, developed coughs. Although none of the sulfadiazine-treated patients developed laryngitis or sore throat, the incidence was 2.3% and 10%, respectively, in the control group.

Bacteriologic studies showed that the sulfadiazine spray does not sterilize the nose and throat, with the occasional exception of a *beta hemolytic streptococcus* infection. A 24-hour cure of sore throats and constitutional symptoms was reported in many patients, however, due to the sensitivity of some strains of streptococcus to sulfadiazine when administered as a spray. To get this result the treatment must begin as soon as possible after the sore throat is noticed and while the bacteria are still on the surface of mucous membrane and lymphoid tissue, accessible to the action of the drug. Other strains of streptococci and pneumococci do not noticeably diminish in numbers but the clinical results suggest that they lose their virulence or their ability to become virulent.

About three per cent of the group treated were sensitive to the sulfadiazine spray as evidenced by such reactions as sneezing and increased rhinitis. General sensitivity may develop in some patients due to the local application of sulfonamides, the physicians warn, which might prevent the administration of these drugs by mouth for a really serious illness sometime in the future. Although no evidence of such sensitivity was observed, the report states, this possibility deserves further consideration and study.

NEW B VITAMIN IS LINKED TO PRODUCTION OF BLOOD CELLS

A discovery linking a new B vitamin, folic acid, with blood cell production in the body has been made at the National Institute of Health in Bethesda, Md. This is the first time a vitamin has been linked with white blood cell production, although a relation between vitamins and red cell production has been hinted by two or three previous reports.

Folic acid will cure the anemia and white blood cell destruction caused in rats by sulfa drugs, Dr. Floyd S. Daft and Dr. W. H. Sebrell, U. S. Public Health Service, report (*Public Health Reports*, Oct. 15, 1943).

Sulfa drugs sometimes cause the same leukopenia and granulocytopenia, and anemia in human patients. The first practical result of the discovery, therefore, will probably be greater safety in sulfa drug treatment.

White blood cell destruction, or a condition in which there are too few of these cells, however, occurs also in patients who have not been getting sulfa drugs. Some of these cases have been attributed to other chemicals, such as those used in formerly popular headache remedies. In other cases no cause for the condition could be found. The findings on the rats suggest pretty strongly that in all such cases the underlying cause may

have been a diet deficient in the folic acid vitamin.

FORMULAS ARE SUGGESTED FOR THE TREATMENT OF SCABIES

The observable current spread of scabies may portend a generally increased incidence of the disease such as occurred during most wars of the past. Drs. Maurice Oppenheim and Henry A. Smith of Chicago report (*Arch. Derm. Syphil.*, Oct., 1943) a "sure, fast, agreeable and cheap" treatment which was successfully used in Austria in combating the epidemic which followed World War I.

The patient's body is first rubbed for 15 minutes with green soap and wood wool, chiefly by the patient himself, giving special attention to the favorite sites of scabies. The head and scalp are not treated.

Then the patient is put into a warm bath (30° C.) and is rubbed again with green soap, this time for half an hour, with a brush or wood wool. The patient is next taken from the bathtub, dried carefully and smeared with an ointment which the pharmacist can prepare for physicians as follows:

Precipitated sulfur	25 Gm.
Potassium carbonate	10 Gm.
Yellow petrolatum	125 Gm.

This formula stems from the old Helmerich salve which originally contained 2 parts of sublimed sulfur, 1 part of potassium carbonate and 8 parts of fat.

After the ointment has been applied, the patient's hands are covered by gloves, the feet by socks, and the patient is rolled in a sheet and covered with a woolen blanket. Physicians may dispense with the socks and gloves at their discretion, if the areas of the burrows are rubbed especially carefully and the ointment thoroughly applied.

After two hours the patient is put under a shower, where the ointment is removed by soaping with a common soap. After careful drying, his entire body except the head and neck is smeared with zinc paste prepared by the pharmacist as follows:

Zinc oxide	30 Gm.
Purified talc	30 Gm.
Yellow petrolatum	60 Gm.

During the treatment, which takes about three hours, the shirts, underwear, socks, gloves and shoes are sterilized by hot air. Moderate itching remains for a few days. All infested members of a household should be treated simultaneously, the physicians report, as the only recurrences which they observed were apparently reinfestations from untreated members of a family. They did not attempt to give this quick treatment to patients with serious eczema or impetigo staphylogenes, old persons, children under 6 years old, patients seriously ill or pregnant women past the middle of pregnancy.

SOAP SOLUTION MAY PREVENT RABIES INFECTION, TESTS SHOW

Soap solution may substitute for fuming nitric acid as part of the preventive treatment for rabies if research reported by Drs. Howard J. Shaughnessy and Joseph Zichis of the Illinois Department of Public Health is confirmed (*J. A. M. A.*, 123:528).

The first step in the usual procedure is to cauterize the wound caused by the animal's bite with fuming nitric acid. This treatment is painful, subsequent healing is slow and there may be severe scarring. In an attempt to overcome these disadvantages, the health authorities investigated other possible methods of preventive treatment.

In experimental rabies in guinea pigs, they found that irrigation of the wound with a 20% solution of soft soap "is just as effective as chemical cauterization with nitric acid, and possibly even more effective." When contaminated wounds were treated within 30 minutes, only 11% of the animals cauterized with nitric acid and only 6% of those irrigated with soap solution became infected, compared with about 63% incidence in untreated controls.

Speed in giving preventive treatment is important, the studies show, as either method is only about two-thirds as effective when applied six hours after the wound or bite occurred. Soap-treated wounds healed in about half the time required for cauterized wounds and there was less scarring.

Applications of tincture of iodine within 30 minutes, a method used in a limited number of tests, gave results which compared favorably to both soap solution and nitric acid. When tincture of iodine was used after a period of two hours,

however, it appeared to be considerably less effective than the other substances. Use of sulfanilamide apparently did not aid in preventing rabies.

COLD AND SINUSITUS RELIEF PROMISED BY NEW SULFA DRUG

Prompt relief in acute colds, perhaps shortening their duration, and control of many cases of chronic sinusitis that otherwise might need surgical treatment by use of desoxyephedronium sulfathiazole is reported by Dr. Frederick M. Turnbull, Dr. William F. Hamilton, Eli Simon and Melvin F. George, Jr., of the Lockheed Aircraft Corporation Research Laboratory, Burbank, Calif. (*J.A.M.A.* 123:536).

Development of the drug stems from the use of a five per cent solution of sodium sulfathiazole for relief of sinusitis. Since this solution has been reported unstable when exposed to light and air, sodium sulfite was first added to produce a more stable solution. *dl*-Desoxyephedrine hydrochloride was then added to decrease congestion, thus assisting the antibacterial action of the sodium sulfathiazole. This vasoconstrictor was not only compatible with sodium sulfathiazole but actually formed a new sulfonamide compound, desoxyephedronium sulfathiazole. Because of a synergistic action, a concentration of only one-eighth of one per cent of the vasoconstrictor is necessary, thereby avoiding the after-effects commonly experienced with prolonged use of vasoconstrictors, such as secondary congestion of the membrane, sneezing, sleeplessness, nervousness and tachycardia.

Packs in the nose were used for office treatment, but the solution may also be prescribed for home use as spray or drops. Chronic sinusitis was treated by irrigating the affected sinuses, instilling the solution into the sinuses, then continuing the treatment by use of the spray or drops at home. The new compound was also used in treating pharyngitis, laryngitis and suppurative otitis media.

FORMULA FOR SEASICKNESS REMEDY AVAILABLE TO U. S.

The formula for the compound developed by the Royal Canadian Navy as a preventive for seasickness and airsickness has been made available for use by the United States Navy. Considerable research has been conducted to develop a product of our own, however, and the Navy has been stocking life rafts with a seasickness remedy for some time. Just what the products contain is considered a military secret, but there are indications that the formula is composed of commonly used drugs instead of a radically new compound.

After the war pharmacists should find such products in demand, particularly for airsickness, to which many tyro air travelers are subject.

The remedy announced by the Canadians is administered orally in capsules one to two hours before sailing or taking off in rough weather. Additional capsules may be taken every eight hours as necessary. Seasickness can thus be prevented, it is claimed, in three out of four persons normally susceptible. Its greatest war service may be in protecting invasion troops carried by the navy, men who must be ready for intense fighting as soon as they set foot on land.

Here are some helpful hints that can also be recommended to those susceptible to seasickness.

If you are very sick, lie down.

Don't read.

As soon as you feel better get out in the fresh air.

Try to keep something on your stomach—what you eat doesn't matter providing it is plain, wholesome food. Small frequent meals are best.

Don't go to sea with a hangover.

Keep away from disturbing sights, smells and sounds. There is an important psychological factor in seasickness.

Stay somewhere amidships—the motion is less violent there.

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ERRATUM

The name of the author of "The Gilded Pill" which appeared on page 224 of the July, 1943, issue of THIS JOURNAL was inadvertently omitted. This paper, which reconstructs British pharmaceutical practices of the mid-eighteenth century from a series of old apothecaries' bills, was written by Leslie G. Matthews, London pharmacist.

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